



The panel members have expertise in salmon ecology, familiarity with salmon habitats in King County, and experience in project design, construction, impacts and mitigation. (See Chapter 6.1 Appendix for copies of their professional resumes.) The seven-member panel is an outgrowth and expansion of a five-member panel convened in early May 1998, when the proposed listing of chinook salmon was first announced, to review County projects for adverse impacts on salmon or critical habitat.

The intent of the panel's work was to identify and assess elements of programs, policies and regulations that may directly or indirectly benefit or hinder the conservation of salmonid species proposed for listing under the Endangered Species Act. Over the past 11 years, King County has taken substantive steps to use its authorities to provide species and ecosystem protection. Those steps began in 1987 with the adoption of the first basin plan, and have continued through 1998 with the implementation of the Surface Water Design Manual. During that time, King County adopted seven basin plans, a new comprehensive growth plan and a range of development regulations.

The assessment effort was not undertaken – and should not be construed – as an exhaustive review of the county's programs, policies or regulations relevant to the conservation of salmon. For example, remaining to be reviewed by the panel over the next few months are:

1. The overall prioritization of the capital improvement projects for parks, waste water, surface water and roads to maximize protection of salmon and critical habitat (for fiscal year 2000 budget, preliminary decision for which are made in summer, 1999);
2. Parks maintenance standards or best management practices;
3. Transit facility operations and maintenance standards; and
4. River improvement program operations and maintenance standards.

The assessment was an initial, expert-based effort to review and evaluate existing programs administered by King County. The assessments were based on written programmatic information provided to the panel by department staff, interviews with policy and technical staff, and the panel's experience with the various programs.

The assessment by the panel was reviewed with the management and policy staff of the County departments responsible for the programs, regulations and policy implementation. Together, the panel, department managers and policy staff prepared recommendations for actions, changes or further analysis directed toward protection of salmon and other species that may be listed as threatened or endangered.

The following recommendations for actions are intended specifically to provide information to the National Marine Fisheries Service that may be useful in the development of protective regulations necessary or advisable for the conservation of threatened salmonid species.

The panel has offered strategies it believes the County has authority to implement under state law, or has a reasonable chance of getting such authority. These include both regulatory and non-regulatory approaches. The strategies encourage collaborative and adaptive management of a broad range of actions affecting salmonids and the ecosystem upon which they rely. These initial recommendations also address necessary authorities, commitments, funding, staffing and enforcement. In some cases, the County already has sufficient authority, staffing and funding to implement or continue strategies that are beneficial to salmon. In cases where the County currently lacks authority or resources to implement protective strategies, the King County Executive is committed to seeking authority and funding support as appropriate and within the County's financial means. In cases where necessary conservation actions can be undertaken successfully only in conjunction with other government and private entities, the County is committed to working with those entities.

It is the panel's opinion that implementation of some or all of these recommendations would allow King County to build on existing, successful programs to advance the conservation of threatened salmonid species. However, the panel's opinion and this report do not bind King County to implement any or all of these recommendations. Further, King County's failure to implement any or all of these recommendations does not necessarily constitute "harm" to threatened salmonid species.

## *Panel Review: Development Regulations and Standards*

### **Sensitive Areas Ordinance**

The King County Sensitive Areas Ordinance (SAO) establishes vigorous protections for species and habitat. A dynamic, adaptive program, the SAO continues to evolve in response to changes in state law, county zoning codes and newly available technical information and biological and ecological science.

The panel's assessment of the SAO is based on written programmatic reviews provided by program staff, interviews with policy and technical staff, and the panel's experience with implementation and enforcement of SAO standards and practices.

Further, in developing this initial assessment, the panel considered the SAO's profound effect on the county's Shoreline Master Program and its reliance on the SAO to enforce standards and practices relevant to the protection of salmonid species and habitat.

### **Program Description**

King County recognizes and appreciates the intrinsic value of sensitive areas – such as wetlands, floodplains and riparian corridors – and has sought to protect or restore the environmental quality and important ecological functions of such areas.

King County has been regulating development within sensitive areas since 1980. In the mid-1980s, the County developed interim guidelines to address the siting of new building lots on steep slope hazard areas.

In November 1990, King County adopted a Sensitive Areas Ordinance that expanded development regulations to include protection of steep slopes, streams and wetlands. Following adoption of the SAO, King County took additional steps to strengthen the ordinance and provide greater protection to wildlife and habitat. Several significant changes were made, primarily to implement Basin Plans, the Growth Management Act, the 1994 Comprehensive Plan, and the incorporation of some area-wide development conditions previously implemented through “p-suffix conditions” adopted by the King County Council. (Note: A “p-suffix condition” is a site-specific condition written into the zoning to deal with specific issues related to a particular site or lot.)

In its current form, King County’s Sensitive Areas Ordinance is an effective environmental protection tool. The goals of the SAO, under KCC 21A.24, are to preserve, protect and, where possible, encourage restoration of critical areas as defined in the Washington State Growth Management Act.

Primary SAO goals include: No net loss of wetlands; protection of native vegetation connecting wetland systems; protection of unique hydrologic cycles, safeguarding soil and water chemistries of bogs, fens and other critical areas through the use of Best Management Practices to control and/or treat stormwater within wetland watersheds; and preservation of listed, candidate or sensitive species through conservation and enhancement of terrestrial, air and aquatic habitats.

Significant SAO objectives, set forth in KCC 21A.24.010, include: establishment of development standards for sensitive areas; protection of unique, fragile and valuable elements of the environment; mitigation of unavoidable adverse impacts on sensitive areas; prevention of cumulative adverse impacts on water quality and quantity; no net loss of wetland and stream functions, meeting federal flood control requirements; and education the public about sensitive areas.

The King County Department of Development and Environmental Services has oversight and enforcement responsibility for the SAO. Administrative rules, adopted under KCC 2.98 and KCC 21A.24.040, are used to implement sensitive area code – together with Title 23 authority. Implementation may occur through the identification and use of permit conditions, or inspection or complaint-driven investigation of non-permit activities.

SAO development regulations are applicable to all development proposals within unincorporated King County – with the exception of actions regulated through state- issued Forest Practice Applications. SAO regulations are implemented during review of permit applications, or through enforcement actions undertaken on unpermitted activities. Since almost any alteration of a sensitive area requires a permit, virtually all development within or adjacent to sensitive areas is subject to SAO regulations. SAO provisions are prescriptive and mandatory, even where permits are not required. Fail-

ure to comply with the SAO constitutes a violation of King County Zoning and/or Clearing and Grading codes and may result in fines, enforcement actions such as stop work orders, or both.

The SAO allows numerous variances and exemptions, including emergency actions such as the construction of flood barriers or the removal of hazard trees. Further, the SAO “grandfathers” existing uses that may conflict with species and habitat protection – and allows maintenance of those uses and associated structures.

Compliance is primarily performed through permit review, the application of permit conditions, and complaint-driven inspections of unpermitted sites. Due to staff limitations, there is little or no monitoring of SAO implementation, compliance or enforcement.

King County has not undertaken a comprehensive and substantive review of the SAO since the ordinance was adopted in 1990. Rather, the SAO has been amended on a “as-needed” basis. Since 1990, the SAO has been amended 12 times in response to changes in state law, zoning codes, and new technical information. Development of modifications to the SAO is an on-going, collaborative effort incorporating input from County departments, state agencies, Native American tribes, community leaders, scientific experts, industry professionals and environmentalists.

#### **Panel Assessments of Sensitive Area Ordinance**

1. The intent, objectives and goals of the SAO, as defined in KCC 21A.24, appear to be consistent with the ESA. (Examples of relevant provisions include: NE-104 which states that King County should protect environmental quality and important ecological functions; NE-316 establishing the goal of no net loss of wetlands; and NE-603 which says habitats for listed species shall not be reduced and should be preserved.)
2. As presently implemented, the SAO allows variances and exemptions that may permit actions that may create direct or indirect adverse impacts as defined by the ESA and NMFS guidance.
3. In addition, when King County presently grants a variance or exemption under the SAO, it may set a precedent for granting further variances or exemptions which may permit additional actions that may harm species and habitat.
4. As presently implemented, the SAO defaults to minimum buffer widths that may be inadequate for meeting ESA goals of habitat protection, biological conservation, and species recovery.
5. At present, there appears to be an insufficient number of both expert staff and general staff to ensure adequate and consistent Sensitive Areas review, monitoring and compliance. The fact that there is only one fisheries biologist on staff is of particular concern.

6. Present SAO staff are utilizing all available training opportunities; additional training opportunities are needed to meet their demand for training.
7. There is no legal authority to require restoration of damage that existed prior to adoption of the SAO.
8. Educational programs for general public and private sector is a general benefit, and may enhance SAO compliance.
9. As presently implemented, there is insufficient formal monitoring of SAO implementation and compliance.
10. Some adverse impacts may not be adequately addressed where mitigation plans do not meet established performance standards or are not fully implemented.
11. The SAO folio is an extremely useful tool, but the mapping and classification of sensitive features – including streams, slopes and wetlands – is incomplete at present.
12. At present, full implementation of the SAO may be hindered because some SAO guidelines and operating procedures are absent or lack sufficient detail.
13. As presently implemented, there is no formal monitoring or evaluation of SAO's effectiveness.
14. As presently implemented, there appears to be no formal mechanism for identifying, analyzing or monitoring cumulative adverse effects that may be occurring.
15. Compliance with permit conditions may be inadequate to prevent some adverse impacts.

#### **Panel Recommendations regarding Sensitive Areas Ordinance**

Guidance from the National Marine Fisheries Service indicates that stakeholders should seek to do no harm, mitigate negative effects, restore or protect habitat, monitor the effects of their actions and, ultimately, permit the conservation of the species.

Based on that guidance, the panel's recommendations are divided into the following categories: Protection/Preservation; Remediation/Restoration; No Harm/ Mitigation; Monitoring/Research.

##### **Protection/Preservation**

1. Adopt the proposed updates to the SAO.
2. Re-evaluate the adequacy of existing sensitive area buffer requirements. Develop and adopt buffer requirements, including Administrative Rules regarding buffer widths, sufficient to satisfy ESA.

3. Increase scientific/technical staff sufficient to ensure adequate and consistent review, monitoring, and compliance with SAO. In light of species conservation concerns for fish, additional fisheries biologists are a high priority.
4. Provide adequate training of existing and new staff, with emphasis on salmonid life history and habitat requirements.
5. Develop and implement more comprehensive standards for mitigation. Require that mitigation plans fully address all adverse environmental impacts.
6. Advocate for state requirement of full disclosure of sensitive areas and conditions upon transfer of title to real property.
7. To enhance enforcement and compliance, provide penalties adequate to prevent future damages.
8. Increase funding for existing education programs for public and private sector. Within King County provide education and training for the staff in the Department of Assessments.
9. To encourage compliance, King County Department of Assessments should work in collaboration with Department of Development and Environmental Services to develop and implement property tax incentives through existing programs (e.g., continue current-use valuation from year to year for SAO property, better integrate restricted uses of sensitive areas).
10. When jurisdictions annex or incorporate Sensitive Areas property, develop and implement a process to ensure that other jurisdictions maintain SAO protections, satisfy the terms of mitigation agreements and assume enforcement responsibilities.
11. Fund and maintain a minimum balance adequate for timely abatement of sensitive areas damage.
12. Establish and fund Best Management Practices for ditch cleaning and maintenance in ditches identified as providing fish habitat. All ditch BMPs should be made consistent with the SAO and ESA.
13. Develop and implement an interdisciplinary technical committee to review SAO variance requests, modeled after the Surface Water Design Manual process, to ensure consistency of decisions and to insulate individual staff from applicant pressure.
14. Give SAO technical staff discretion to determine the need for site visits for all permit applications proposing site alteration. This should reduce potential sensitive area conflicts and avoid other unintended, adverse impacts.

**Remediation/Restoration**

1. Develop guidelines regarding mitigation of emergency repairs and provide funding mechanisms sufficient to complete the mitigation.

**No Harm/ Mitigation**

1. Aggressively explore off-site mitigation opportunities when on-site mitigation does not result in a net benefit.
2. Utilize the existing Public Benefit Rating System (PBRs) to offer incentives for restoration of damage incurred prior to adoption of the SAO.
3. Make PBRs more “user-friendly.”

**Monitoring/Research**

1. Develop a tracking program to assess the number and location of emergency repairs and their likely impacts.
2. Monitor and evaluate variances and exemptions to provide guidance for reduction of buffers under Reasonable Use Exemptions and Public Agency Use Exemptions, particularly for parks, utilities and schools.
3. Assess variances and exemptions for their implications relative to maintenance of public health and safety and adequate sensitive-area protection. Where a variance or buffer averaging is likely to result in an emergency situation that will also lead to further reduction of habitat (e.g., hazard trees or a reduced buffer width that allows development in a flood-prone area), the County should establish and fund a program to acquire those parcels.
4. Complete the SAO folio, including listing of steep slopes, unmapped and unclassified streams, and wetlands.
5. Monitoring for biological effectiveness – develop and implement reference standards for adaptive management.
6. Monitoring for SAO compliance.
7. Gather baseline data for existing site conditions and buffers for future reference using digital photography compatible with GIS systems.
8. Upon release of the Washington State Department of Ecology’s Wetland Functional Assessment method, King County should evaluate, modify and adopt it as appropriate.
9. Undertake an assessment of cumulative effects and vested impacts under SAO.
10. Develop and implement evaluation of SAO standards, practices and actions.

## **Clearing & Grading Code**

King County's Clearing and Grading Code (C&G) offers significant protections to salmonid species and habitat by establishing a "do no harm" standard, and by its support of other key programs such as the Sensitive Areas Ordinance and the Shoreline Master Program.

The Panel's assessment is based on written programmatic reviews provided by program staff, interviews with policy and technical staff, and Panel's experience with implementation and enforcement of C&G Code standards and practices. Further, in developing this initial assessment, the Panel considered the high degree of reliance on the code by other programs to enforce standards and practices relevant to the protection of salmonid species and habitat.

### **Program Description**

The King County Clearing & Grading Code is potentially one of the County's most powerful defenses against sensitive habitat degradation and/or loss. It grants broad authority controlling implementation of other key standards relevant to threatened salmonid species and protection of their habitat.

All development proposals within unincorporated King County must comply with the Clearing & Grading Code, with one notable exception: The State pre-empts local governments from imposing development regulations on state-issued Forest Practices. However, King County and the Washington State Department of Natural Resources are close to completing a jurisdictional transfer of authority that would designate all Forest Practices within Urban Growth Areas as conversions subject to local development regulations. Within rural areas, logging on previously developed properties would also be subject to county development regulations, including the Clearing and Grading Code.

The King County Council adopted its Clearing & Grading Code in 1971. At that time, the ordinance was primarily intended to protect public health, safety and welfare by minimizing adverse storm water impacts resulting from site grading, and to protect water quality by minimizing negative impacts resulting from quarrying and mining operations.

The Clearing & Grading Code was amended in November 1990, in conjunction with the adoption of a revised Sensitive Areas Ordinance, to allow full implementation of the Comprehensive Plan and Growth Management policies. Those changes to the Clearing and Grading Code established a baseline of environmental protection.

The King County Department of Development and Environmental Services (DDES) is responsible for administration and enforcement of the Clearing and Grading Code.

The goal of the Clearing & Grading Code, as set forth in KCC 16.82, is to ensure development occurs in a manner that supports continued ecological and hydrologic functioning of water resources.

The objectives of the program relevant to threatened salmonid species and protection of their habitat include: protect sensitive areas and water quality; minimize adverse stormwater impacts; protect water quality from negative effects of erosion and sedimentation; and minimize aquatic and terrestrial wildlife habitat loss caused by vegetation removal.

The original Clearing & Grading regulations were modeled after Chapter 70 of the Uniform Building Code and the State of Washington Surface Mine Reclamation Act. Existing Clearing and Grading standards that rely on the Uniform Building Code and the Surface Mine Reclamation Act are very general and require other codes and standards for full implementation. (For example, KCC16.82.100 requires erosion controls for any disturbed soils, but that requirement is found in the King County Surface Water Design Manual.)

The Clearing and Grading Code also incorporates standards established in adopted Basin Plans developed by the King County Department of Natural Resources, the Surface Water Design Manual, King County's Zoning Code and other guidelines from local, state and federal agencies.

Within the Clearing & Grading Code, there is no formal process for granting variances. Even when a permit is not required, all clearing and grading undertaken in unincorporated King County must comply with performance standards set forth in the code or supplemental information such as the Surface Water Design Manual.

The DDES Site Development Services Section is responsible for ensuring compliance with the Clearing & Grading Code. Compliance is achieved through site inspections and enforcement of permit conditions or standards. Remedies for code violations are set forth in KCC Title 23.

#### **Panel Assessments of Clearing & Grading Code**

1. The goal of the Clearing & Grading Code sets forth a “do no harm” standard and therefore is consistent with the ESA.
2. However, C&G Code objectives under KCC 16.82.010, which call for “minimization” of environmental impacts, may be inconsistent with the purpose of ESA.
3. This is a powerful code relevant to species and habitat protection. It has a broad grant of authority controlling implementation of other standards and criteria – from permit application to enforcement – relevant to the ESA. The code is prescriptive, does not require a permit to undertake enforcement or other actions, supplements other codes which have protection functions or key purposes and supports the Sensitive Area Ordinance and Shoreline MP.
4. At present, coordination between the King County Shoreline Master Program and the Clearing and Grading Code program is informal and therefore may result in less than full code compliance.
5. Present staffing levels within the Sensitive Areas Ordinance program may negatively affect C&G's ability to fully support the SAO

6. Present penalties for violators appear to be insufficient to deter damaging actions and ensure C&G compliance.
7. Adopted Best Management Practices for erosion control appear to be effective where installed properly and monitored. Seasonal clearing limits are sometimes necessary to augment BMPs; additional in-stream measures have also been effective where required by C&G staff.
8. The present, complaint-driven enforcement mechanism may be inadequate to identify all sites where damaging actions occur and may hinder assessment of cumulative impacts.
9. There is a lack of baseline information regarding site conditions making enforcement difficult.
10. Certain terms affecting implementation are poorly defined (e.g. landscape maintenance).
11. Additional process requirements under Title 23 may reduce efficiency of C&G enforcement efforts.
12. Washington State's streamlined permit process may limit King County's ability to implement the Clearing & Grading Code.
13. As presently implemented, there is no formal process for monitoring or evaluating C&G effectiveness.
14. As presently implemented, C&G includes variances and exemptions that may permit actions which create direct or indirect adverse impacts as defined by the ESA and NMFS guidance. In addition, when King County presently grants a variance or exemption under the C&G, it may set a precedent for granting further variances or exemptions that may permit additional actions which harm species and habitat
15. As presently implemented, there appears to be no formal mechanism for identifying, analyzing or monitoring of cumulative adverse effects that may occur as result of prescribed C&G Code practices or violations.

### **Panel Recommendations regarding Clearing & Grading Code**

#### **Protection/Preservation**

1. Update the Clearing and Grading code's objectives to include non-degradation standards consistent with the Clean Water Act and the ESA.
2. Formalize coordination between Clearing & Grading and Shoreline Master Program staff. This could be accomplished by adding a routing station to each permit/exemption form.
3. Implement a process to ensure that Sensitive Areas staff adequately review Clearing & Grading permit applications that may affect sensitive areas or their buffers.

4. Develop guidelines to ensure consistent application of Clearing & Grading code by program staff.
5. Fund adequate staffing of SAO ecologists and fisheries biologists to better address marine, fish, wildlife and water quality concerns.
6. Evaluate the unused or underutilized Clearing and Grading code objectives and authority relevant to species and habitat protection. Develop guidelines to effectively implement that authority beneficial to salmonid species and habitat protection.
7. Evaluate effectiveness of compliance penalties; implement changes in penalties and enforcement as necessary to ensure compliance with the Clearing and Grading code.
8. In light of ESA, evaluate KCC 23 (Code Enforcement) and KCC 20.24 (Hearing Examiner) in relation to KCC 16.82 (Clearing & Grading) to provide appropriate review, compliance and enforcement practices for clearing and grading permits.
9. Develop new Clearing & Grading code implementation language to clarify key terms including, but not limited to, “vegetation” and “landscape maintenance.” Clarify that the requirements for “vegetative covers” are intended to provided for mature forest cover.
10. Evaluate Washington State’s streamlined permit process for habitat restoration projects and seek authority to enforce local standards. Clarify project size thresholds for inclusion in the streamlined permit process.

#### **No harm/Project-Specific Mitigation**

1. Adequately fund and train staff to ensure inspection and implementation of erosion control Best Management Practices.

#### **Monitoring/Research**

1. Review and evaluate existing ground conditions in sensitive areas or other critical habitat for compliance with Clearing & Grading, Sensitive Areas Ordinance, Shoreline Master Program and the ESA.
2. Evaluate the effectiveness of the present complaint- driven enforcement model as it relates to species and habitat protection. Where it is not effective, consider implementation of additional measures modeled on other active enforcement programs (e.g. Fire Code enforcement) and/or stewardship programs (e.g. River Keepers).

#### **Shoreline Master Program**

The Washington State Shoreline Management Act (SMA), which currently is undergoing ESA review at the state level, profoundly affects the ways in which King County is able to implement its Shoreline Master Program (SMP). The Biological Review Panel’s preliminary assessment of the county’s SMP necessarily includes comments regarding the effectiveness of the state’s

SMA as a conservation tool and its consequences for locally mandated shoreline protections.

The panel's assessment also takes into account written programmatic reviews provided by program staff, interviews with policy and technical staff, and panel's experience with implementation and enforcement of SWDM standards and practices.

In developing this initial assessment, the panel considered SMA and SMP standards, practices, policies, implementation and monitoring effects on salmon conservation, and whether those effects are consistent with the ESA. The panel anticipates continuing evaluation of both the SMA and SMP.

### **Program Description**

King County's Shoreline Master Program (SMP) is modeled on and consistent with the Washington's Shoreline Management Act (SMA). The King County SMP, within the parameters established by the SMA, governs the development and use of shorelines designated as shorelines of the state.

As described in KCC 25.04.010, the goals and policies of the SMP are intended to prevent harm to natural shorelines that may be caused by piecemeal development and to protect wildlife and aquatic life from possible adverse effects of such development.

The purpose of the SMP is to plan for, and foster, all reasonable and appropriate uses of the natural shorelines, including alterations to the shoreline such as single family residences, ports, recreational areas, industrial and commercial development.

Pre-dating the federal Endangered Species Act, the state's SMA seeks to balance environmental protection with public use of shorelines in ways that may be inconsistent with the ESA. However, when the SMA was adopted through a citizen's initiative in 1971, it was hailed as one of the nation's most progressive environmental laws.

The King County Council adopted the current SMP in May 1978. The standards, practices and policies of the SMP are based on the best science available at that time – as well as political compromises intended to protect the environment while preserving public use of shorelines and private property rights.

In 1990, the King County Council adopted the Sensitive Areas Ordinance (SAO), which complements the SMP and strengthens its effectiveness as an environmental protection tool. Improvements in environmental science and the development of Best Management Practices for shoreline areas also allow the SMP to function with increased effectiveness.

The SMP is principally a site development review process that culminates in the approval or denial of Shoreline Substantial Development Permits, Shoreline Variances, Shoreline Conditional Uses, or Shoreline Exemptions. The King County Department of Development and Environmental Ser-

vices may grant variances, conditional use permits and exemptions through a public administrative process. Variances – which typically address residential setbacks or dock dimensions – are subject to approval by the Washington State Department of Ecology and are reviewed against the standards of WAC 173-27-100.

The SMP is supported by a variety of laws and regulations, such as SAO, SEPA, NEPA, FEMA flood requirements, the King County Clearing and Grading Code, and the King County Surface Water Design Manual. Although the SMP as administered does not have a full-time shoreline inspector, monitoring and code enforcement depends upon Code Enforcement officers, building inspectors, grading inspectors and geotechnical staff. Violators are subject to monetary penalties under Title 23 of the King County Code. The state's SMA also provides civil and criminal penalties for violations.

A comprehensive re-evaluation of the King County Shoreline Master Program is anticipated within the next few years, as part of the ongoing effort to integrate the Washington State Shoreline Management Act and the Washington State Growth Management Act.

#### **Panel Assessments of Shoreline Master Program**

1. Washington State's Shoreline Management Act, which pre-dates the Endangered Species Act, does not describe specific objectives for species and habitat protection consistent with the ESA.
2. While there may be some broad base use to the SMA, it was not intended to provide a net benefit under the ESA. Rather, the intent behind the SMA is to balance the competing goals of shoreline protection and public use.
3. The SMA's efforts to "balance" outcomes may permit harm to species and habitat. Implementation of the SMA through local SMPs may allow jurisdictions to emphasize one objective over the other and may hinder the recovery of listed species and critical habitat.
4. SMA designations are based upon the level of existing development (urban, rural, conservancy, or natural) and not upon the underlying resource values.
5. King County's current SMA implementation relies upon other regulatory programs (such as the SAO, C&G, etc.) to provide conditions, compliance and monitoring. At present, there is no formal, consistent feedback mechanism between these regulatory programs, so it is difficult to assess the effectiveness of the SMA.
6. There is limited biological or ecological input into program implementation. There is no dedicated SMP program staff responsible for biological and ecological review of programs and consultation with Sensitive Areas Ordinance ecologists occurs on a case-by-case basis.

7. At present, there is limited impact analysis during the SMP application and review process.
8. There is no formal, ongoing effects analysis during the SMP application and review process, or after construction. There is no formal project-specific monitoring, or formal cumulative effects monitoring.
9. The State's SMA contains standard exemptions which may adversely affect conditions in shoreline areas.
10. At present, technical guidance for the SMP is not formally documented.
11. At present, procedural guidance for the SMP is not formally documented.
12. The SMP does not have mechanisms for adaptive management.
13. As presently implemented, King County's SMP does not appear to provide a significant net benefit as that term is defined by the ESA. Further, as presently implemented, King County's SMP likely has not prevented harm and may allow actions that hinder recovery or cause incremental harm to species and habitat.

### **Panel Recommendations regarding Shoreline Master Program**

In making its recommendations, the Panel considered both the King County Shoreline Master Program and the Washington State Shoreline Management Act. While the county does not have the authority to modify state law, it is important to acknowledge the SMA sets a baseline for local jurisdictions and may need to be re-evaluated in light of ESA.

#### **Protection/Preservation**

1. Dedicate King County resources, including the Biological Review Panel, to a comprehensive review of the Washington State Shoreline Management Act with the goal of making state and local shoreline programs consistent with the ESA. If possible, such review should coincide with the current revision process related to the Washington Department of Ecology Shoreline Guidelines and King County Shoreline Master Program.
2. Develop and implement a formal decision-making process that integrates input from Shoreline Master Program, Sensitive Areas and Clearing and Grading policy and technical staff to improve protections afforded by SMP permits, variances and exemptions.
3. Fund additional Sensitive Areas staff to ensure comprehensive biological and ecological permit review. In light of ESA listings of fish, the Panel recommends hiring additional fisheries biologists.
4. Fund and assign inspection staff to ensure permit compliance.
5. Evaluate conditions under which SMP emergency exemptions are granted to avoid improper application of program guidelines.

6. Enforce the code provision for joint-use docks.
7. Review conditions under which SMP exemptions are granted. Restrict or prohibit SMP exemptions as necessary to meet ESA goals.
8. Develop and implement SMP technical guidance manuals for construction and mitigation methods.

#### **Remediation/Restoration**

1. Apply “new construction” standards for replacement and/or repair of existing structures (e.g., docks, bulkheads and bank stabilization) to reduce possible adverse effects on salmonid habitat resulting from non-conforming uses.

#### **Monitor/Research**

1. Evaluate and monitor the effectiveness of permit conditions to determine whether conditions are adequate to prevent adverse impacts to salmonid habitat.
2. Evaluate and monitor the SMP permit process, including a review of criteria used to determine needs for variances and exemptions. Consider re-classifying exemptions as Type 2 decisions to provide opportunity for public comment from citizens and resource agencies.
3. Fund research, data collection and monitoring necessary to assess the environmental effects of docks, piers and bulkheads on all salmonids species and habitat. Initiate a coordinated effort by county and state agencies to develop and implement clear standards for such development.

### **Surface Water Design Manual**

The Biological Review Panel’s preliminary assessment of the King County Surface Water Design Manual (SWDM) is based on written programmatic reviews provided by program staff, interviews with policy and technical staff, and panel’s experience with implementation and enforcement of SWDM standards and practices.

In developing this assessment, the Panel considered SWDM standards, practices, policies, implementation and monitoring effects on salmon conservation, and whether those effects are consistent with the ESA.

#### **Program Description**

King County’s Surface Water Design Manual is potentially a powerful and effective conservation tool and consistent with the ESA. The SWDM establishes rigorous standards and procedures for designing surface and stormwater runoff controls required for new development and redevelopment in unincorporated King County. The overall goal of the SWDM, as described in KCC 9.04, is to minimize adverse impacts to water resources and downstream properties caused by development-related surface water.

The King County Council adopted the current version of the SWDM in September 1998. The SWDM uses the most up-to-date analysis methods and designs to control surface water flow rates and to reduce pollutant loading from new development and redevelopment. The SWDM employs hydrologic modeling software and water quality treatment designs that incorporate King County's rainfall conditions and soil characteristics. Design standards in the SWDM were formulated to match the level of protection to the specific needs of resources, based on sensitivities documented in basin plans, scientific research and other technical information. Water quality standards and practices are applied geographically, and may target the removal of specific pollutants such as toxic metals and phosphorus

All projects requiring a King County permit or development approval (such as building permits or clearing and grading permits) are required to comply with the SWDM standards. Applications for variances and exemptions are subjected to a rigorous review and are allowed only if they meet SWDM objectives of environmental protection, safety, function, and appearance. Further, it must be demonstrated that surface water facilities can be maintained to provide sufficient protection over time.

Staff from the King County Department of Natural Resources developed the regulations and standards set forth in the SWDM. The regulations and standards are administered and enforced by staff from the King County Department of Development and Environmental Services and the Department of Natural Resources. (See appendix 6.2 for a more detailed summary of the King County Surface Water Design Manual.)

### **Panel Assessments of the Surface Water Design Manual**

1. The Surface Water Design Manual, as described in KCC 9.04, sets forth a "do no harm" purpose consistent with the goals of the ESA. The goal of the SWDM is to establish, implement and enforce standards and practices that avoid, minimize or mitigate surface water impacts from new development and redevelopment
2. The SWDM has limited restorative elements, but restoration is not a primary objective. The SWDM could address restoration through extensive retrofitting of water quality and quality controls on redevelopment projects. However, in developed areas of King County, the water quality benefits that may be derived from retrofitting would be minimal.
3. The SWDM does not establish standards and practices that maintain the natural hydrograph, or fully prevent or mitigate all adverse environmental impacts from increased volumes, velocity and a range of actions affecting water quality. This has clear implications for the maintenance of biotic integrity. Of particular concern are the effects of detergents, herbicides, pesticides and other non-point source pollution.
4. The SWDM recognizes through its standards the geographic distribution of highest-value resources, and facilitates protection of those resources.

5. However, the SWDM standards may not adequately protect migration corridors in highly urbanized areas. Where the SWDM designates a “level one” flow control standard it assumes that, within those areas, there are no habitat features or functions sensitive to development-induced runoff and flow durations.
6. SWDM standards and practices provide one of the highest levels of storm water control and protection available in the country. The SWDM uses the most up-to-date analysis methods and designs to control surface water flow rates and to reduce pollutant loading from new development and redevelopment.
7. The adoption of King County’s SWDM by numerous local jurisdictions is a benefit to the goal of species conservation. However, the panel and program staff are concerned that application may not be consistent across all jurisdictions using the SWDM.
8. The SWDM training and support program is critical to the proper implementation of the manual by all users.
9. The protective standards established by the SWDM are maintained even in cases where adjustments are granted, unless those adjustments are allowed as Reasonable Use Exceptions.
10. Pressures to quickly process permits may reduce effectiveness of design review. Current staffing levels make it difficult to ensure complete application of SWDM standards and practices and meet mandated permit processing deadlines.
11. The cumulative effects of projects too small to trigger SWDM standards and practices are not currently tracked and, therefore, have not been assessed.
12. King County Code 9.04 builds in adaptive management mechanisms including monitoring, evaluation and SWDM revisions, but does not offer opportunities to mitigate adverse effects of existing projects.
13. Facilities construction compliance is high.
14. The SWDM encourages adaptive management by allowing the application and evaluation of experimental technologies.
15. Inspection maintenance is critical to the long-term effectiveness of SWDM management measures.
16. Monitoring as provided for under the SWDM is insufficient to evaluate adverse environmental effects. Further, where problems are identified, the SWDM does not provide an adequate mechanism for resolution.
17. Privately maintained facilities may not consistently comply with SWDM maintenance requirements. In the absence of Regionally Significant Resource Areas, the SWDM has a reduced capacity to provide protection of important ecosystem structures, functions and processes.

18. The SWDM is not yet approved by the Washington State Department of Ecology as equivalent to the state's surface water management manual.

### **Panel Recommendations regarding the Surface Water Design Manual**

#### **Protection/Preservation**

1. Request that NMFS officially recognize the SWDM as a protective tool for the conservation of salmonids, particularly as improvements are made in the following four areas:
  - Level 2 flow controls with a 20 percent safety margin become the default standard;
  - New, effective tools are implemented to address water quality concerns, such as detergents, pesticides and herbicides, through fundamental design improvements and educational programs;
  - A program is developed to adequately address increased stormwater volumes from development;
  - The threshold for triggering SWDM protections is lowered to a level of acceptable cumulative impact.
2. The SWDM should be revised to include an objective to protect high-quality habitat and resource areas.
3. Complete Designations and Protection of SRAs countywide.
4. Provide adequate training and support for professionals using the SWDM, including standards and practices for Temporary Erosion and Sediment Control (TESC).
5. Fund public education to enhance source control and protect water quality, and to improve compliance with SWDM objectives.
6. Increase King County Department of Development and Environmental Services (DDES) staffing levels and resources to ensure adequate implementation of the SWDM.
7. Provide adequate funding for WLR staffing and resources for inspection and maintenance of county-owned facilities consistent with SWDM standards.
8. Ensure adequate and customized training for SWDM inspectors. Customize training to geographic location and job type.
9. Increase funding and resources for post-construction site inspection and evaluation of all public and private facilities for compliance and maintenance consistent with SWDM standards.
10. Develop and implement authority requiring that "orphan facilities," such as off-road storm water conveyance systems, comply with SWDM maintenance standards and practices.

11. Provide authority to undertake and charge for inspection and maintenance of private facilities where necessary to ensure compliance under SWDM.
12. Subsequent to the recommended assessment of surface water management needs in migratory corridors and the incorporation of SWDM protections for those areas, initiate discussions with other local jurisdictions (cities) to encourage adoption of SWDM – including setting of adequate standards (e.g. flow control, water quality, sensitive areas) to protect migratory corridors outside King County jurisdiction.

#### **Remediation/Restoration**

1. Evaluate needs and opportunities for retrofit actions. Fund appropriate retrofit actions, including regional CIPS and habitat acquisition.

#### **Monitoring/Research**

1. Fund and implement a program to assess the biological effectiveness of the SWDM.
2. Implement a tracking system for compliance, enforcement, violations, variances and exemptions associated with SWDM implementation.
3. Assess surface water management needs specific to migratory corridors for salmon, and evaluate SWDM management programs to protect those corridors.

## *Panel Review: Basin Plans*

### **Cedar River Basin Plan**

The Cedar River Basin Plan was adopted in 1997, following seven years of technical analysis that included an inventory of surface water conditions and identification of the most significant problems in the basin and their causes – from an aquatic habitat, water quality, and hazardous flooding perspective. (See Chapter 5 for an overview of the basin planning program. For a full description of the basin plan, see Chapter 6 Appendix 6.3.)

“Core” and “non-core” projects were identified, based on their relative significance and other factors. The plan’s recommendations included: requiring improved facilities for stormwater management; habitat restoration projects; modifying development to reduce excessive runoff and pollutants; identifying ways to lessen hazardous flooding; and development of programs to encourage public involvement and stewardship.

King County’s ability to implement basin plans can be reduced significantly by annexations or incorporations by other jurisdictions.

The panel's assessments and recommendations are based on written programmatic reviews provided by program staff, interviews with policy and technical staff, and the panel's experience with implementation and enforcement of Cedar River Basin Plan standards and practices. Further, in developing this initial assessment, the panel considered the high degree to which the Cedar River Basin Plan is relied upon by other programs to enforce standards and practices relevant to the conservation of salmonids.

#### **Panel Assessments of the Cedar River Basin Plan**

1. The Cedar River Basin planning program goals are consistent with the Endangered Species Act (ESA).
2. Cedar River Basin plan objectives are generally consistent with the ESA. Some aspects of flood control are not consistent with ESA objectives.
3. The timeframe for implementation of some recommendations of this plan may be too long to meet ESA goals, particularly in light of NMFS's technical staff's characterization of the existing condition in the lower Cedar River as detrimental to the long-term conservation of listed salmonids.
4. Volunteer programs have been highly successful in engendering public support for the goals of this basin plan.
5. The Cedar River Council (CRC) has been successful in fostering the community's support of programs consistent with ESA goals.
6. The basin plan did not identify minimum instream flow and flow regime needs for mainstem and tributaries where withdrawal may be a concern.
7. Monitoring of effectiveness and compliance of current use taxation programs and conservation easements is inadequate.
8. Lower Cedar mainstem habitats important to conservation of salmonids are not designated as significant resource areas (SRAs) and therefore may not receive adequate protection.
9. Valley floor RSRA (springs and side-channel areas) may not receive protection from land use effects that should be afforded RSRA areas.
10. The basin plan does not provide a mechanism for assessing cumulative effects of projects and activities in the basin, including those that do not meet permit thresholds (e.g., single-family residences) and activities of non- King County governmental entities.
11. The basin plan does not assess major externalities, including the impacts from:
  - Improvements to State Route 18.
  - Maple Valley incorporation.
  - Expansion of State Route 169.

- Tahoma School east of Rock Creek.
- Development and management of King County and suburban roads and parks.
- Future annexations and sewer extensions.

12a. Basin plan adaptive mechanisms are in place but not used.

12b. Basin plan monitoring and evaluation programs are not fully implemented (data not collected, data not adequately shared, analysis and interpretation not timely enough to implement adaptive management decisions) and efforts not coordinated (many agencies are involved).

13. Voluntary Forest Retention Program has the potential to be an effective conservation program as it has strong community support and can reach most of the land area in the basin. Voluntary aspect may also be a weakness in light of ESA mandate for certainty of protective actions.

14. Inadequate training and/or staffing (even failure to designate staffing) within other programs on which the stewards rely hampers basin plan implementation (sensitive areas ordinance, enforcement, roads, parks, health department, restore lands).

15. Due to competing management mandates, habitat acquisitions often are not managed for full habitat value.

16. Floodplain buyout priorities are not consistent with habitat acquisition priorities or capital improvement projects (CIPs).

17. Funding is not often available when the opportunities for floodplain buyouts arise, either due to geographic, administrative or timing constraints.

18a. Several basin plan priorities remain unfunded, including:

- Floodplain buyouts.
- Core CIPs.
- Habitat acquisitions.
- Aquatic resource mitigation banking.
- Monitoring/evaluation.

18b. Several basin plan priorities remain underfunded, including:

- CRC staff support
- Public involvement and education.
- Basin plan resources may be better spent avoiding resource loss rather than attempting to recover it.
- Lake Washington studies funded through the Basin Plan have been beneficial to adaptive management.

**Panel Recommendations regarding the Cedar River Basin Plan**

1. Review Cedar River Basin flood control plan for consistency with ESA.
2. Evaluate and, if necessary, adjust priorities and timelines for implementation or basin plan recommendations.
3. Maintain adequate staffing levels to support the activities of the CRC.
4. King County's comments on the Cedar River HCP should emphasize the need for mainstem flow regimes appropriate to meeting ESA goals of conserving and recovering listed species and an evaluation of the proposed sockeye hatchery for consistency with ESA.
5. Assess withdrawals and diversions from tributaries (including groundwater) and develop and implement instream flows standards for tributaries. This assessment could rely on the County's regional water supply planning authority.
6. Designate the mainstem of the lower Cedar River, between Landsburg and the City of Renton, as a regionally significant resource area (RSRA).
7. Recommend that the City of Renton designate the Cedar River, within its jurisdictional boundaries, as a locally significant resource area (LSRA) or give it an equivalent level of protection.
8. Evaluate whether valley floor RSRAs are adequately protected from impacts by the implementation of development regulations.
9. Request that WSDOT prepare a Supplemental EIS for the State Route extension, with specific exploration of direct, indirect, and cumulative impacts to salmonids.
10. Recommend that Maple Valley adopt conservation standards consistent with those in the basin plan.
11. Request an EIS for any future expansion of State Route 169.
12. Remove public facility and institutional development regulation exemptions in Cedar River RSRA to be consistent with other basin plans.
13. Review development and management of public roads and parks for consistency with the basin plan goals.
14. Require new development in forested areas to meet a 65 percent forest retention standard.
15. Ensure adequate funding and coordination of flood plain buyouts to take advantage of purchase opportunities in a timely manner.
16. Prioritize spending plan and develop long-term financial plan to fund it.

17. Continue participation in and funding of Lake Washington studies.
18. Use the Basin Plan and the forum as foundation for continuation of Lake Washington studies.

### **Bear Creek Basin Plan**

Completed in 1990, the Bear Creek Basin Plan was developed jointly through an interlocal agreement between King County, Snohomish County and the City of Redmond. The plan covers a 51-square-mile watershed – a highly productive salmonid basin. (For a full description of the basin plan, see Chapter 6 Appendix).

Developed and written in 1988 and 1989 by a technical staff that included a resource planner, engineers, a biologist and a hydrologist, the plan was *not* written with the Endangered Species Act as a central theme. Nevertheless, the conservation elements of this plan have subsequently been developed much beyond the scope of its initial recommendations, resulting in a strategy that now presents one of the better examples of an integrated basin recovery plan.

The panel's assessments and recommendations are based on written programmatic reviews provided by program staff, interviews with policy and technical staff, and the panel's experience with implementation and enforcement of Bear Creek Basin Plan standards and practices. Further, in developing this initial assessment, the Panel considered the high degree to which the Bear Creek Basin Plan is relied upon by other programs to enforce standards and practices relevant to the conservation of salmonids.

### **Panel Assessments of the Bear Creek Basin Plan**

1. The goals and objectives of the Bear Creek Basin Plan are consistent with Endangered Species Act goals.
2. Protection needs for Cold Creek – a critical cold water source for Cottage Lake Creek – have not been adequately assessed.
3. Strong community support for protecting Bear Creek is important to conservation in the basin (and others, e.g. TESC program, Bear Creek Basin Plan Assessment).
4. Lack of adoption of the basin plan by all basin jurisdictions has resulted in inconsistent protective measures, e.g. different buffer width standards.
5. Some early monitoring aspects of adaptive management are taking place, e.g. Cold Creek/Rutherford Creek, Sammamish River.
6. Timely analysis and production of data would facilitate further the application of adaptive management measures.
7. No program exists to retrofit retention/detention facilities that do not meet current Surface Water Design Manual (generally, facilities constructed prior to 1990).

8. The headwaters of Bear Creek are not receiving a level of resource protection equal to that in King County's portion of the basin.
9. Temporary erosion sedimentation control (TESC) has been highly effective due to community involvement, despite having no staff assigned to that program in this basin.
10. While community-based incentive conservation programs have been successful, they lack sufficient long-term funding/application elements.
11. Bear Creek is host to other species that could be listed under the ESA.
12. Cottage Lake is not adequately protected from the impacts of nutrient loading originating in upper watershed areas. Phosphate concentrations greatly exceed the water-quality standards.
13. Basin planning principles have not been applied to the Sammamish River.

#### **Panel Recommendations regarding the Bear Creek Basin Plan**

1. Assess and implement watershed level protections necessary for the long-term protection of Cold Creek, including its spring-fed hydrology.
2. Assess and mitigate for indirect impacts of urban infrastructure extended to serve Urban Planned Developments. Enforce utility hook-up restrictions over the long term to prevent urban in-filling.
3. Assess and mitigate for the indirect and cumulative effects, including growth inducement, of road capacity improvements through Bear Creek Basin to serve Snoqualmie Valley.
4. Maintain existing rural designations in the basin, despite major utility upgrades to service Urban Planned Developments,
5. Encourage Snohomish County to either acquire or adequately protect the headwaters of Bear Creek and Cottage Lake Creek.
6. Prioritize acquisition or other incentive conservation measures for the headwaters of Bear Creek.
7. Implement the Cottage Lake Management Plan.
8. Evaluate and establish in-stream flow standards.

#### **East Lake Sammamish and Issaquah Creek Basin Plans**

The East Lake Sammamish Basin Plan and Issaquah Creek Basin Plan were adopted by the King County Council in November 1993 and July 1995, respectively.

The goals of the East Lake Sammamish Basin Plan were to evaluate the water quality, aquatic resources, and surface water problems of the basin under past, current and future land use conditions. The Issaquah Creek

Basin Plan was designed to develop a program of effective actions to prevent and reduce flooding, non-point source pollution, habitat degradation, and stream-channel erosion. (For a full description of the basin plans, see Chapter 6 appendix.)

The panel's assessments and recommendations are based on written programmatic reviews provided by program staff, interviews with policy and technical staff, and the panel's experience with implementation and enforcement of the East Lake Sammamish and Issaquah Creek Basin Plans' standards and practices. Further, in developing this initial assessment, the Panel considered the high degree to which these plans are relied upon by other programs to enforce standards and practices relevant to the conservation of salmonids.

### **Panel Assessments of East Lake Sammamish and Issaquah Creek Basin Plans**

1. Achieving full implementation of both basin plans throughout their originally designated range is problematic because of the incorporation and annexation.
2. Even if fully implemented, East Lake Sammamish Basin Plan would only minimize the rate of habitat degradation.
3. Full implementation of the Issaquah Creek Basin Plan would produce net benefits to the conservation of listed species.
4. Enforcement of Issaquah Creek Basin Plan's forest retention standard may be transferring development pressure and impacts into the Cedar River Basin, where forest retention standard is not mandated.
5. East Lake Sammamish Basin Plan's inspector-based temporary erosion sedimentation control (TESC) program is an exemplary program that should be a model for other jurisdictions.
6. The Issaquah Creek Basin Plan does not account for the impacts of State Route 18 extension, of the proposed Interstate 90 interchange or of the widening of State Route 900.
7. Because runoff from Interstate 90 drains directly into the Issaquah Creek system, spill containment safeguards are inadequate.
8. Maintenance, e.g. dragline channel dredging, associated with Interstate 90 has clear impacts to East Fork Issaquah and Tibbetts Creek.
9. East Lake Sammamish Basin Plan seasonal clearing limits were not implemented.
10. Evaluation of East Lake Sammamish Basin Plan educational program demonstrates the program is an effective tool. That evaluation will also serve as the basis for the implementation of additional effective measures.

11. Hatchery management practices (e.g. outplanting, release timing and migration barriers) may adversely impact native salmonid species in the Issaquah Creek ecosystem.
12. Other species, particularly kokanee and bull trout, may have greater significance in the Issaquah Creek Basin than chinook.
13. Flood control projects in the city of Issaquah may be inconsistent with Basin Plan goals.

#### **Panel Recommendations regarding East Lake Sammamish and Issaquah Creek Basin Plans**

1. Negotiate with the City of Sammamish for the application of protection standards equivalent to those found in other East Lake Sammamish basin plan areas. At a minimum, bring the City of Sammamish into Lake Sammamish Water Quality Management Plan Inter-Local Agreement. Upgrade the inter-local agreement for better protection.
2. Assemble an inter-jurisdictional and inter-agency task force to assess and develop spill-response protocols for Interstate 90 and other roads, including structural retrofits.
3. Continue King County participation in Issaquah Hatchery Management Task Force.

#### **Soos Creek Basin Plan<sup>1</sup>**

Adopted by the King County Council in 1992, the Soos Creek Basin Plan evaluated stream flows, erosion, sediment deposition, stream habitat and water quality for a 70- square-mile area in south King County, north of the Green River. The basin, which includes portions of several King County cities, exemplifies the difficulty of protecting a natural resource while simultaneously accommodating rapid population growth. (For a full description of the basin plan, see Chapter 6 Appendix.)

Since the plan's adoption, the basin has experienced some of the most rapid growth in the county. Although parts of the basin remain rural in character – with streams of good or excellent quality – urban areas within the basin have expanded, with annexations by the cities of Renton, Kent, Auburn, and Black Diamond, as well as the incorporation of two new cities, Maple Valley and Covington.

The panel's assessments and recommendations are based on written programmatic reviews provided by program staff, interviews with policy and technical staff, and the panel's experience with implementation and enforcement of Soos Creek Basin Plan standards and practices. Further, in developing this initial assessment, the Panel considered the high degree to which the Soos Creek Basin Plan is relied upon by other programs to enforce standards and practices relevant to the conservation of salmonids.

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<sup>1</sup> Includes other Green River Basin issues

### Panel Assessments of the Soos Creek Basin Plan

*(Note: Unless the Green River watershed is specified, these assessments refer specifically to Soos Creek issues.)*

1. Much of the Green River watershed is not covered by a basin plan.
  - No systematic inventory of resources.
  - No prioritization of resources.
  - Haven't considered major issues/impacts: impacts of levee system; impacts of dams.
2. However, much of the area has been covered by other plans:
  - Green Duwamish Nonpoint Action Plan
  - Special Area Management Plan for Mill Creek
  - Ecosystem Restoration Study for Green River mainstem
  - Water Quality Assessment for Duwamish River and Elliot Bay
3. No resource planning completed in nearshore area.
4. Only 50 percent of the Soos Creek basin remains under King County jurisdiction.
5. In-stream flow issues may be the governing factor in development in some basin areas (e.g., Covington).
6. There is a low level of community involvement relative to other basins.
7. Although the basin plan was not a water quality plan, Soos Creek water quality did improve after the basin plan implementation. Water is likely to decline over the long term due to impacts from new development.
8. Soos Creek riparian habitat downstream of the hatchery is being adversely impacted by directed Chinook sport fishery.
9. Hatchery management (e.g., outplanting, release timing and migration barriers) may be negatively impacting salmonid species in the Soos Creek ecosystem
10. Temporary erosion sedimentation control (TESC) is not being enforced in the Soos Creek basin, due to lack of staffing.
11. Seasonal clearing limits have not been applied in Soos Creek basin.
12. Waterways 2000 did not include nearshore areas or Soos Creek basin, even though there may be habitat areas that would be valuable to protect through such a program.
13. State Route 18 capacity expansion project should be assessed for impacts, particularly in the Jenkins Creek basin.
14. King County Surface Water Management Service Area does not include some ecologically valuable watershed areas, limiting opportunities for conservation in those areas.

15. The role of regional retention/detention facilities in protecting habitat is unknown.

#### **Panel Recommendations regarding the Soos Creek Basin Plan**

1. Implement the following elements of the basin plan within areas under King County jurisdiction:
  - Seasonal clearing limit.
  - Temporary erosion sedimentation controls (TESC).
  - 65 percent forest retention.
  - 150-foot buffers in regionally significant resource areas (RSRAs).
  - Regional retention/detention (R/D).
2. Request the state to mitigate for chinook sport fishery impacts to lower Soos Creek riparian habitat.
3. Request state to develop a hatchery management plan that allows for natural spawning upstream from the hatchery and mitigates for adverse impacts to the ecosystem.

#### **In-common Recommendations for all King County basin plans**

In addition to recommendations that reflect the unique circumstances of each basin plan, the panel developed several recommendations that apply to all the basin plans. This is in keeping with King County's proposed approach that draws together efforts to conserve and recover chinook salmon through development of long-term, science-based, multi-stakeholder conservation plans coordinated and implemented through the individual Water Resource Inventory Areas (WRIAs) within the Tri-County area.

A WRIA essentially is an administrative unit that closely follows watershed boundaries. In the Tri-County area, there are six WRIAs: Stillaguamish, Snohomish, Cedar-Sammamish, Green/Duwamish, Puyallup-White and Nisqually.

The Bear Creek, Cedar River, East Lake Sammamish and Issaquah Creek Basin Plans are all within the Cedar- Sammamish WRIA 8. The Soos Creek Basin Plan is part of the Green/Duwamish WRIA 9. The existing basin plans, therefore, provide a solid foundation on which to build WRIA-based, salmon-recovery plans. (For a complete description of the history of watershed-based planning and its relationship to the WRIA-based salmon conservation and recovery plan, see Chapter 7.)

Just as the Tri-County effort is identifying elements that all the WRIA Conservation Plans should have in common in order to conserve and recover chinook salmon, the panel developed some recommendations that should apply to all basin plans.

**Panel Recommendations regarding all basin plans**

1. Related to funding concerns:
  - Provide adequate funding for volunteer programs and public education.
  - Document benefits of expenditures for conservation.
  - Review and prioritize unfunded plan components and pursue an aggressive funding plan.
  - Dedicate funds over longer term and beyond jurisdictional boundaries.
2. Provide adequate long-term funding for monitoring and evaluation of basin plan effectiveness.
3. Develop adaptive management feedback loop/mechanism (including cumulative effects issues tied to ESA goals) including review of basin planning principles, all basin plans being implemented, and other plans, e.g., flood hazard reduction program.
4. Establish an inspection program sufficient to achieve the objectives of temporary erosion sediment control (TESC). Staffing by geographic area should be proportional to construction or clearing activity.
5. Establish seasonal clearing limit, in addition to temporary erosion sedimentation control (TESC) inspection, in areas where resources are particularly susceptible to sedimentation and erosion impacts.
6. Designate a contact person in each relevant King County program/agency to facilitate implementation of the basin plans.
7. Use King County basin plans, work of the Watershed Forums, and other existing studies as building blocks for the development of WRIA-based conservation plans.
8. Establish formal coordination program for implementation of the basin plans with relevant external agencies, e.g. Washington State Parks, Washington State Department of Transportation, Federal Highway Administration.
9. Use basin plan methodologies and experience to fashion/weld watershed-wide Water Resources Inventory Area (WRIA) plans and to undertake basin plans at a smaller geographic scale within WRIsAs.
10. Assess the potential effectiveness of incentive programs for resource (species) protection in areas not yet covered, e.g., Snoqualmie, Skykomish and White River drainages and nearshore marine areas.
11. Implement and adequately staff a training program for those who are essential in implementing basin plans.

12. Prioritize habitat values in managing habitat acquisitions. Reassess and fully fund existing site management plans for high-quality habitat purchases.
13. Expand basin steward program countywide.
14. Develop and implement 24-hour complaint/response program for clearing and grading violations.
15. Implement alternatives to existing enforcement procedures sufficient to ensure adequate resource protection and consistency with ESA, e.g., performance bonds for abatement of construction violations.
16. Establish response teams to abate emergency violations in a timely manner.
17. Assess the impacts of “receiving body” designations (a water body receiving undetained storm flows) and develop and implement recommendations for problems identified.
18. Assess hydrologic and water-quality degradation of water bodies important to salmonid conservation. Develop and implement retrofit or regional solutions to address problems identified.
19. Utilize land-use appeals process to challenge decisions by cities that result in reduced protections and other departures from established protection protocols.
20. Assess flow requirements and develop instream flow standards for all salmon-bearing streams.
21. Identify gaps in existing studies that would require further watershed-based analysis, e.g. life history requirements and geographic distribution of listed species, and land-use based water quality analysis.

## *Panel Review: Wastewater Program*

King County’s Wastewater Program has many innovative features, including water reuse pilot projects. The Wastewater Program is intended to ensure that biological resources are considered and adequately protected or mitigated during all phases of project development. The program has provided a net benefit to the conservation of salmonids in freshwater areas.

The panel’s assessment is based on written programmatic reviews provided by program staff, interviews with policy and technical staff, and the Panel’s experience with implementation and enforcement of Wastewater standards and practices.

### **Panel Assessments of the Wastewater Program**

1. The construction, siting and overflows of wastewater collection/transmission facilities could have a major impact on ecosystems.

2. A large number of collection facilities operated by other utilities and linked to the County's wastewater system are outside the County's jurisdiction. These facilities could also have major impacts on aquatic ecosystems.
3. There are a limited number of facilities that are independent and not linked to the County's wastewater system, but could have impacts on aquatic resources.
4. Combined Sewer Overflows (CSOs) operated by King County continue to discharge untreated sewage and stormwater into the Duwamish River and Elliot Bay. These are in addition to other uncontrolled CSOs operated by the City of Seattle.
5. Emergency bypasses of untreated wastewater enter surface waters during periods of heavy rainfall or power outages. This oftentimes coincides with periods of salmon migration.
6. CSO discharges cause sediment contamination near their outfalls. The real extent of contamination, and its effects on salmonids which use the lower Duwamish for out-migration and other purposes (e.g., Chum and Chinook salmon, which spend several months in the estuary before out-migration), are unknown.
7. Infiltration and inflow may have implications for salmonid habitat, through both water quality and water quantity impacts.
8. The water reuse program has great potential as a water conservation tool. However, discharge of reused water may affect salmonids and their ecosystem, particularly salmonid behaviors such as migration, spawning and rearing. Those effects have not been assessed.
9. Water saved through reuse programs may be reallocated to other consumptive uses, rather than to instream flows.
10. In urban freshwater areas, King County's wastewater treatment program has provided a net positive benefit for the conservation of salmonids.
11. Impacts from endocrine disruptors on salmonids have not been adequately assessed.
12. While King County wastewater meets or exceeds the rigorous permit requirements imposed by federal and state regulations, permit compliance does not guarantee sufficient protection of aquatic ecosystems. More information is needed about the efficacy of water quality standards in protecting aquatic ecosystems.
13. The current Wastewater project management model, involving both technical and biological input in the early stages of project development, is a good model for project management.
14. The "coincident benefit" model for project construction appears to be effective in reducing project impacts and could be used as a model for other County CIP programs.

15. Wastewater Treatment Division is undertaking a habitat conservation plan (HCP) that will address, in phases, all aspects of its operations, including capital construction. There is a great deal of reliance on the HCP to address species conservation issues that may need attention before an HCP can be completed.
16. Wastewater facilities located in or along stream channels and riparian corridors have effects on those habitats. Such effects have not been assessed.

**Panel Recommendations regarding the Wastewater Program**

1. Continue monitoring and assessment of impacts from CSOs, especially the effects of sediment contamination, on habitat important to salmonids. Broaden the geographic scope of such monitoring and assessment.
2. Monitor a broader range of ecosystem indicators around CSOs, e.g. invertebrate diversity, community structure and trophic interactions.
3. Assess the positive and negative implications of a water reuse program on salmonids, especially in regard to reallocation and water quality.
4. In cooperation with EPA and National Marine Fisheries Service, assess the implications of endocrine disruptors on salmonid physiology and biochemistry.
5. Cooperate with regulatory agencies in assessing the effectiveness of wastewater discharge standards in conserving salmonids.
6. Assess the benefits of the wastewater project management models and where appropriate apply them to other departments and divisions.
7. In preparation for the HCP, assess the impacts of Wastewater facilities in or along stream channels and riparian corridors.
8. Assess the extent and quality of salmonid habitat affected by the Wastewater Program. This assessment should begin now in order to establish a baseline for consideration of impacts and alternatives.
9. Study infiltration and inflow contributions from all local component agencies and develop a long-term program to reduce or eliminate clean water entering the regional wastewater system.
10. Review and evaluate the effects of emergency by passes on salmonids.

